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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,786	09/24/2003	Alexandr Kuzminskiy	6-10	6382

7590 04/26/2007  
Docket Administrator  
Lucent Technologies Inc.  
Room 3J-219  
101 Crawfords Corner Road  
Holmdel, NJ 07733-3030

EXAMINER
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BAYARD, EMMANUEL

ART UNIT	PAPER NUMBER
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2611

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/26/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/669,786

Applicant(s)

KUZMINSKIY ET AL.

Examiner

Emmanuel Bayard

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This is in response to communication filed on 2/8/07 in which claim 1-16 are pending. The applicant's amendments have been fully considered but they are moot based on the new ground of rejection therefore this case is made final.

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smee et al U.S. patent No 7,082,174 B1 in view of Zhu et al U.S. patent No 6,973,144 B1.

As per claims 1 and 16, Smee et al teaches receiver of digital data bursts comprising: an antenna array (see fig.4a elements 132a-132K), a first space time filter having filter coefficients initialized by estimation over just training data in a received burst and providing symbol estimates (see fig.4a element 410a) at a first output; a second space time filter having filter coefficients initialized by estimation over the received burst and providing symbol estimates (see fig.4a element 410b) at a second output, in use at least one pass to determine a symbol estimate in the received burst being undertaken by each space time filter.

However Smee et al does not teach a selector arranged to use the symbol estimates from the first and second outputs to determine which of the first and second filters provides the symbol estimate closer to an expected value.

Zhu et al teaches teach a selector arranged to use the symbol estimates from the first and second outputs to determine which of the first and second filters provides the symbol estimate closer to an expected value (see abstract and fig.4 element 414 and col.5, lines 10-35 and col.8, lines 15-30).

It would have been obvious to one of ordinary skill in the art to implement the teaching of Zhu into Smee as to more accurately estimate the channel response and thus reduce the number of errors detected by the decoder as taught by Zhu (see col.8, lines 25-30).

As per claim 2, Smee et al and Zhu in combination would teach in which the filter giving the symbol estimate closer to the expected value is selected by the selector to continue with at least one further pass to provide an updated symbol estimate to a projector to the finite alphabet so as to enable a decision as to the identity of that symbol to be made as to more accurately estimate the channel response and thus reduce the number of errors detected by the decoder as taught by Zhu (see col.8, lines 25-30).

As per claim 3, Smee et al and Zhu in combination would teach in which for each new received burst, both filters perform at least one pass to determine a respective symbol estimate in the received burst, and the selector operates to determine which of the first and second filters provides the symbol estimate closer to an

expected value as to more accurately estimate the channel response and thus reduce the number of errors detected by the decoder as taught by Zhu (see col.8, lines 25-30).

As per claim 4, Smee et al teaches in which the estimation by the first filter and the second filter is least squares (see col.8, lines 63-67).

As per claims 5, 9, 12-13, Smee et al teaches terminal for mobile telecommunications which is a base station or a mobile user terminal (see col.5, lines 40-43).

As per claims 6, 10 and 14, Smee et al teaches operative to receive data bursts sent using orthogonal Walsh sequence is the same as the claimed (Orthogonal Frequency Division Multiplexing (OFDM)) (see col.17, lines 53-55).

As per claims 7, 11 and 15, Smee et al teaches operative to receive data bursts sent using Time Division Multiple Access (TDMA) (see col.3, lines 24-25).

As per claim 8, Smee et al teaches in which the estimation by the first filter and the second filter is least squares estimation (see col.8, lines 60-67).

### ***Conclusion***

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kohno et al U.S. Pub No 2001/0019575 A1 teaches a space hopping receiving system.

Daniele et al U.S. Pub No 2006/0280228 A1 teaches a data transmission using repeated sets.

Zastera U.S. patent No 5,621,770 teaches a method and system for processing first and second digital signals.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Bayard whose telephone number is 571 272 3016. The examiner can normally be reached on Monday-Friday (7:Am-4:30PM) Alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571 272 2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Emmanuel Bayard  
Primary Examiner  
Art Unit 2611

4/16/07



**EMMANUEL BAYARD**  
**PRIMARY EXAMINER**